Engineering Interpretations

Physical Properties

This table shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils. Information in this table includes depth, percent clay, moist bulk density, permeability, available water capacity, shrink-swell potential, K and T erosion factors, wind erodibility group, and percent organic matter.

Properties

DEPTH to the upper and lower boundaries of each layer is indicated.

CLAY (percent) as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeters in diameter. The estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

MOIST BULK DENSITY is the weight of soil (oven dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3 bar moisture tension. Weight is determined after drying the soil at 105 degrees C. The estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter.

PERMEABILITY OR SATURATED HYDRALIC CONDUCTIVITY refers to the ability of a soil to transmit water or air. The estimates indicate the rate of movement of water through the soil when the soil is saturated. They are based on soil characteristics in the field, particularly structure, porosity, and texture.

AVAILABLE WATER CAPACITY refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage in each major soil layer is stated in inches of water per inch of soil. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone.

SHRINK-SWELL POTENTIAL OR LINEAR EXTENSIBILITY is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil.

EROSION FACTOR K indicates the susceptibility of a soil to sheet and rill erosion by water (see Section I, Erosion Prediction).

EROSION FACTOR T is an estimate of the maximum average annual rate of soil erosion that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons per acre per year (see Section I, Erosion Prediction).

ORGANIC MATTER is the plant and animal residue in the soil at various stages of decomposition.

This subsection includes:

- **(a) Physical Properties**

Taney County, Missouri
Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
14D:														
Knobby	0-3	55-70	20-30	5-18	1.30-1.50	4.00-14.00	0.07-0.10	0.0-2.9	1.0-2.0	.15	.20	1	8	0
	5-9	50-70	15-35	10-18	1.30-1.50	4.00-14.00	0.07-0.11	0.0-2.9	1.0-2.0	.17	.28			
	9-19	---	---	---	---	0.00-0.42	---	---	---	---	---			
Rock outcrop	0-60	---	---	0-0	---	---	0.00-0.00	---	---	---	---	--	---	---
14F:														
Knobby	0-5	40-50	30-45	10-18	1.30-1.50	4.00-14.00	0.13-0.17	0.0-2.9	1.0-2.0	.24	.32	1	8	0
	5-9	50-70	15-35	10-18	1.30-1.50	4.00-14.00	0.07-0.11	0.0-2.9	1.0-2.0	.17	.28			
	9-19	---	---	---	---	0.00-0.42	---	---	---	---	---			
Rock outcrop	0-60	---	---	0-0	---	---	0.00-0.00	---	---	---	---	--	---	---
16G:														
Brussels	0-13	10-20	45-65	27-40	1.30-1.50	1.40-4.00	0.09-0.14	3.0-5.9	2.0-4.0	.10	.28	5	8	0
	13-20	5-20	40-65	35-50	1.35-1.55	1.40-4.00	0.06-0.12	3.0-5.9	1.0-2.0	.10	.28			
	20-60	5-30	25-60	35-50	1.35-1.55	1.40-4.00	0.02-0.06	3.0-5.9	0.5-1.0	---	---			
Rock outcrop	0-60	---	---	0-0	---	---	0.00-0.00	---	---	---	---	--	8	0
18D:														
Gasconade	0-4	20-35	25-45	35-40	1.35-1.50	4.00-14.00	0.10-0.12	3.0-5.9	2.0-4.0	.20	.28	1	8	0
	4-14	5-35	25-55	35-50	1.45-1.70	1.40-4.00	0.05-0.07	3.0-5.9	0.5-1.0	.05	.28			
	14-60	---	---	---	---	0.00-0.42	---	---	---	---	---			
Gatewood	0-9	15-30	50-70	15-25	1.10-1.40	4.00-14.00	0.06-0.12	0.0-2.9	1.0-2.0	.15	.37	2	8	0
	9-25	5-20	10-45	50-85	1.10-1.30	0.42-1.40	0.09-0.12	6.0-8.9	0.5-1.0	.24	.32			
	25-29	5-20	10-40	55-85	1.10-1.30	0.42-1.40	0.07-0.10	6.0-8.9	0.5-1.0	.15	.32			
	29-43	---	---	---	---	0.00-0.42	---	---	---	---	---			
Rock outcrop	0-60	---	---	0-0	---	---	0.00-0.00	---	---	---	---	--	8	0

Taney County, Missouri
Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
18F:														
Gasconade	0-8	20-35	25-45	35-40	1.35-1.50	4.00-14.00	0.05-0.07	3.0-5.9	2.0-4.0	.10	.32	1	8	0
	8-19	5-35	25-55	35-50	1.45-1.70	1.40-4.00	0.05-0.07	3.0-5.9	0.5-1.0	.05	.28			
	19-29	---	---	---	---	0.00-0.42	---	---	---	---	---			
Gatewood	0-10	15-30	50-70	15-25	1.10-1.40	4.00-14.00	0.06-0.12	0.0-2.9	1.0-2.0	.15	.37	2	8	0
	10-32	5-20	10-45	50-85	1.10-1.30	0.42-1.40	0.09-0.12	6.0-8.9	0.5-1.0	.24	.32			
	32-43	---	---	---	---	0.00-0.42	---	---	---	---	---			
Rock outcrop	---	---	---	---	---	---	---	---	---	---	---	--	8	0
24C:														
Ocie	0-7	15-35	50-70	10-20	1.10-1.40	4.00-14.00	0.12-0.17	0.0-2.9	1.0-2.0	.20	.37	3	8	0
	7-22	15-45	5-65	15-27	1.10-1.35	4.00-14.00	0.05-0.12	0.0-2.9	0.1-0.5	.15	.43			
	22-51	5-25	20-50	50-80	1.10-1.30	0.42-1.40	0.07-0.14	6.0-8.9	0.1-0.5	.32	.32			
	51-61	---	---	---	---	0.00-0.42	---	---	---	---	---			
Gatewood	0-13	15-30	50-70	15-25	1.10-1.40	4.00-14.00	0.06-0.12	0.0-2.9	1.0-2.0	.15	.37	2	8	0
	13-29	5-20	10-45	50-85	1.10-1.30	0.42-1.40	0.09-0.12	6.0-8.9	0.5-1.0	.24	.32			
	29-33	5-20	10-40	55-85	1.10-1.30	0.42-1.40	0.07-0.10	6.0-8.9	0.5-1.0	.15	.32			
	33-43	---	---	---	---	0.00-0.42	---	---	---	---	---			
24E:														
Gatewood	0-9	15-30	50-70	15-25	1.10-1.40	4.00-14.00	0.12-0.17	0.0-2.9	1.0-2.0	.24	.37	2	8	0
	9-21	5-20	10-45	50-85	1.10-1.30	0.42-1.40	0.09-0.12	6.0-8.9	0.5-1.0	.28	.32			
	21-43	---	---	---	---	0.00-0.42	---	---	---	---	---			
Ocie	0-2	15-35	50-70	10-20	1.10-1.40	4.00-14.00	0.09-0.14	0.0-2.9	1.0-2.0	.15	.37	3	8	0
	2-18	15-45	30-65	15-27	1.10-1.35	4.00-14.00	0.05-0.12	0.0-2.9	0.1-0.5	.15	.43			
	18-49	5-25	20-50	50-80	1.10-1.30	0.42-1.40	0.07-0.14	6.0-8.9	0.1-0.5	.32	.32			
	49-61	---	---	---	---	0.00-0.42	---	---	---	---	---			
44D:														
Clarksville	0-13	15-30	50-70	14-20	1.20-1.40	14.00-42.00	0.07-0.12	0.0-2.9	1.0-2.0	.15	.37	3	8	0
	13-43	10-30	50-65	25-35	1.30-1.45	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.5	.10	.43			
	43-60	5-20	25-55	40-75	1.20-1.40	4.00-14.00	0.05-0.08	6.0-8.9	0.0-0.5	.10	.28			

Taney County, Missouri
Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
45F:														
Hailey	0-12	20-35	35-70	10-15	1.20-1.40	42.00-141.00	0.05-0.14	0.0-2.9	1.0-2.0	.10	.37	3	8	0
	12-60	25-60	25-50	10-20	1.20-1.40	42.00-141.00	0.02-0.11	0.0-2.9	0.0-0.5	.05	.37			
46F:														
Rueter	0-13	10-35	50-85	14-20	1.20-1.40	14.00-42.00	0.07-0.12	0.0-2.9	1.0-2.0	.15	.37	3	8	0
	13-42	10-25	50-80	25-35	1.30-1.45	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.5	.10	.43			
	42-60	5-25	5-40	40-75	1.20-1.40	4.00-14.00	0.05-0.08	6.0-8.9	0.0-0.5	.10	.28			
Rock outcrop	0-60	---	---	0-0	---	---	0.00-0.00	---	---	---	---	--	8	0
55B:														
Britwater	0-11	15-35	50-75	15-25	1.35-1.45	4.00-14.00	0.14-0.20	0.0-2.9	1.0-2.0	.37	.43	5	5	56
	11-21	15-35	35-70	18-34	1.35-1.45	4.00-14.00	0.12-0.18	0.0-2.9	0.5-1.0	.28	.37			
	21-36	15-35	25-60	27-50	1.30-1.45	4.00-14.00	0.08-0.16	0.0-2.9	0.0-0.5	.15	.37			
	36-60	5-25	25-55	27-60	1.25-1.40	4.00-14.00	0.08-0.16	3.0-5.9	0.0-0.5	.20	.32			
55C:														
Britwater	0-9	15-35	50-75	15-25	1.35-1.45	4.00-14.00	0.14-0.20	0.0-2.9	1.0-2.0	.37	.43	5	5	56
	9-44	15-35	35-70	18-34	1.35-1.45	4.00-14.00	0.12-0.18	0.0-2.9	0.5-1.0	.28	.37			
	44-60	5-35	25-55	27-60	1.25-1.40	4.00-14.00	0.08-0.16	3.0-5.9	0.0-0.5	.20	.32			
57B:														
Lecoma	0-6	65-70	10-25	6-18	1.40-1.50	4.00-14.00	0.14-0.18	0.0-2.9	1.0-2.0	.32	.32	5	3	86
	6-55	25-40	30-60	15-30	1.50-1.60	4.00-14.00	0.17-0.21	3.0-5.9	0.0-0.5	.32	.43			
	55-60	35-65	10-35	18-35	1.50-1.60	4.00-14.00	0.11-0.20	3.0-5.9	0.0-0.5	.15	.37			
66A:														
Huntington	0-14	5-25	50-75	18-30	1.10-1.30	4.00-14.00	0.18-0.24	0.0-2.9	2.0-4.0	.28	.28	5	6	48
	14-60	5-25	50-70	18-30	1.30-1.50	4.00-14.00	0.16-0.22	0.0-2.9	1.0-2.0	.32	.32			
76A:														
Racket	0-10	15-30	50-70	15-27	1.25-1.45	4.00-14.00	0.18-0.24	0.0-2.9	2.0-3.0	.32	.32	5	6	48
	10-56	15-45	35-65	18-35	1.25-1.45	4.00-14.00	0.14-0.20	3.0-5.9	1.0-2.0	.32	.32			
	56-60	15-40	40-65	18-35	1.25-1.45	4.00-14.00	0.12-0.15	3.0-5.9	1.0-2.0	.15	.32			

Taney County, Missouri
Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
81B:														
Viraton	0-11	15-30	50-75	15-25	1.30-1.50	4.00-14.00	0.18-0.22	0.0-2.9	1.0-2.0	.37	.43	4	6	48
	11-26	10-30	45-70	18-35	1.30-1.50	4.00-14.00	0.08-0.16	0.0-2.9	0.5-1.0	.37	.43			
	26-51	10-30	45-70	18-30	1.60-1.90	0.01-0.42	0.01-0.05	0.0-2.9	0.0-0.5	.10	.43			
	51-60	5-30	25-50	40-60	1.10-1.40	1.40-4.00	0.06-0.10	3.0-5.9	0.0-0.5	.05	.28			
93A:														
Cedargap	0-3	35-50	30-50	12-25	1.20-1.45	4.00-14.00	0.11-0.18	0.0-2.9	2.0-4.0	.15	.32	5	8	0
	3-20	20-50	30-60	12-27	1.30-1.50	4.00-14.00	0.10-0.15	0.0-2.9	1.0-2.0	.15	.32			
	20-26	20-50	30-60	12-27	1.40-1.55	4.00-14.00	0.04-0.10	0.0-2.9	0.5-1.0	.05	.32			
	26-60	10-45	30-60	25-35	1.40-1.55	4.00-14.00	0.04-0.12	0.0-2.9	0.5-1.0	.10	.43			
95A:														
Kaintuck	0-5	55-70	15-35	5-18	1.30-1.50	14.00-42.00	0.09-0.17	0.0-2.9	0.5-1.0	.24	.24	5	3	86
	5-60	---	---	5-18	1.20-1.50	4.00-14.00	0.14-0.19	0.0-2.9	0.5-1.0	.32	.32			
96A:														
Sandbur	0-10	55-70	10-30	5-18	1.30-1.50	14.00-42.00	0.09-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	10-45	55-75	5-30	4-16	1.30-1.50	14.00-42.00	0.10-0.15	0.0-2.9	0.5-1.0	.17	.17			
	45-60	70-95	---	5-20	1.30-1.50	14.00-42.00	0.05-0.11	0.0-2.9	0.5-1.0	.15	.17			
99:														
Pits, quarries	---	---	---	---	---	---	---	---	---	---	---	--	8	0
AED:														
Orthent	---	---	---	---	---	---	---	---	---	---	---	--	---	---
M-W:														
Water	---	---	---	---	---	---	---	---	---	---	---	--	---	---
W:														
Water	---	---	---	---	---	---	---	---	---	---	---	--	---	---